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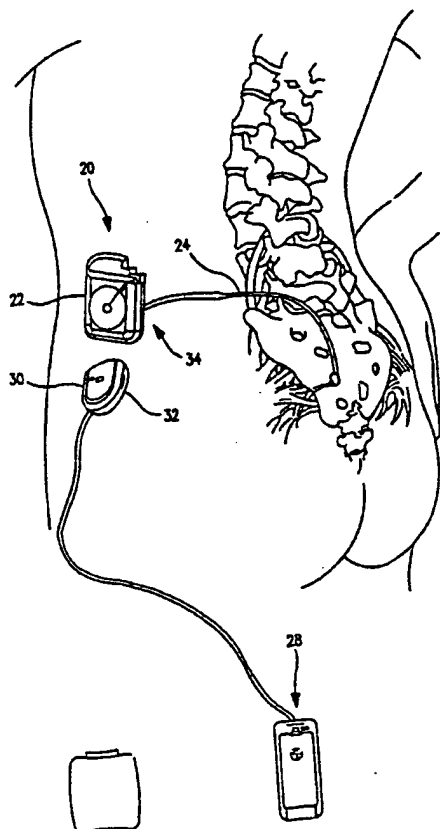
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[Continued on next page]

(54) Title: AN IMPLANTABLE MEDICAL DEVICE WITH A REGARDING COIL MAGNETIC SHIELD



(57) Abstract: A rechargeable implantable medical device with a magnetic shield placed on the distal side of a secondary recharging coil to improve recharging efficiency is disclosed. The rechargeable implantable medical device can be a wide variety of medical devices such as neuro-stimulators, drug delivery pumps, pace-makers, defibrillators, diagnostic recorders, and cochlear implants. The implantable medical device has a secondary recharging coil carried over a magnetic shield and coupled to electronics and a rechargeable power source carried inside the housing. The electronics are configured to perform a medical therapy. Additionally a method for enhancing electromagnetic coupling during recharging of an implantable medical device is disclosed, and a method for reducing temperature rise during recharging of an implantable medical device is disclosed.

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23 May 2002

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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/18926

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 A61N1/378 A61N1/36

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61N A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 071 032 A (SCHULMAN JOSEPH H) 31 January 1978 (1978-01-31)  the whole document	1-3,6,7, 9,10,17, 22-28, 30,31, 33,35, 37-41, 43,45
X	US 4 041 955 A (KELLY FRANK L ET AL) 16 August 1977 (1977-08-16)  the whole document	1-3,6,7, 9,10,17, 22-25, 30,31, 33,35, 37-41, 43,45

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Date of the actual completion of the international search

7 December 2001

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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Y	WO 99 44684 A (BORZA MICHAEL A ; DEW ENGINEERING AND DEV LIMITE (CA)) 10 September 1999 (1999-09-10)  the whole document	1-3, 5-7, 9, 10, 17-20, 22-28, 30, 31, 33, 35-41, 43, 45
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Y	US 4 186 749 A (FRYER THOMAS BY) 5 February 1980 (1980-02-05) the whole document	19

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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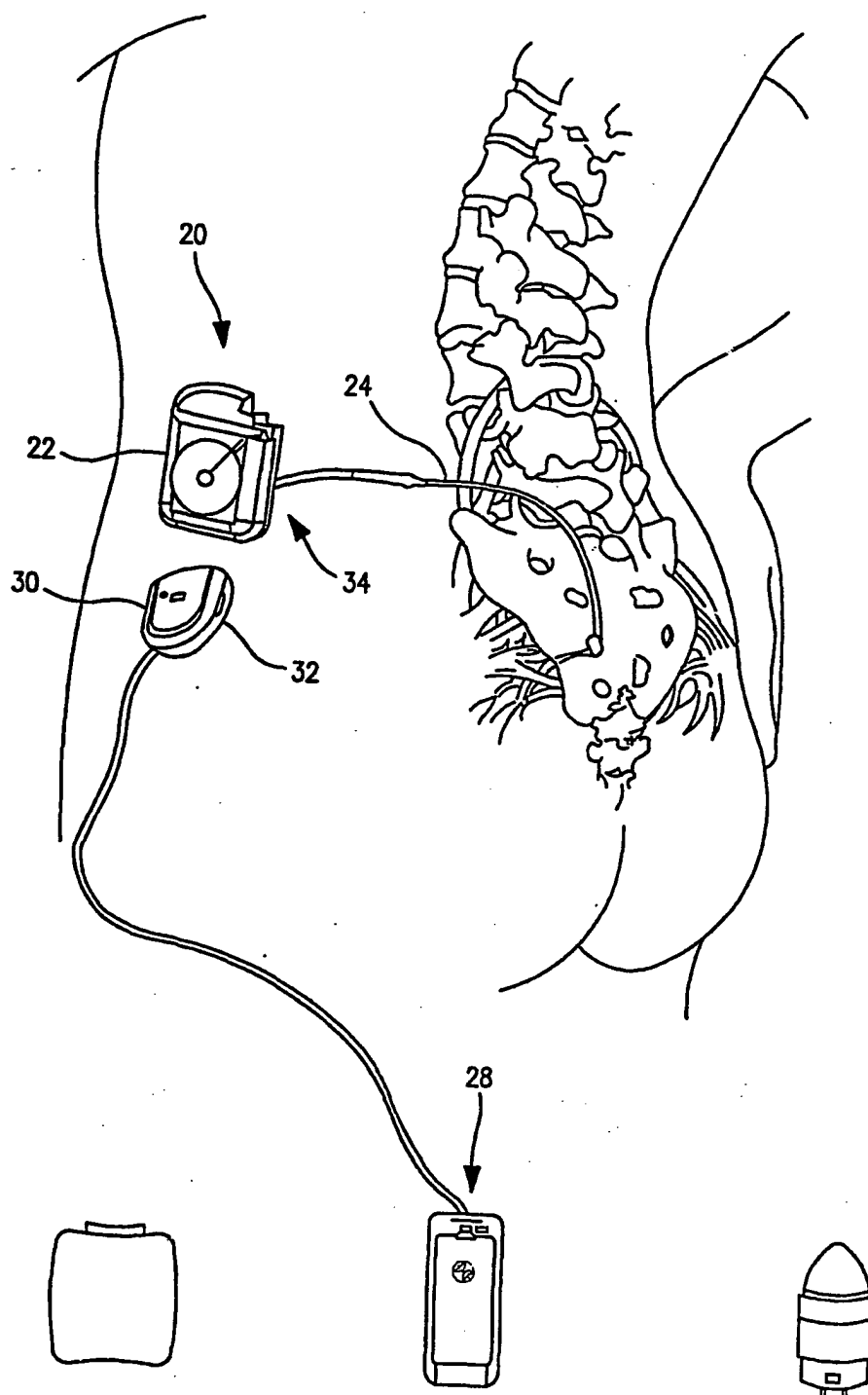


FIG. 1

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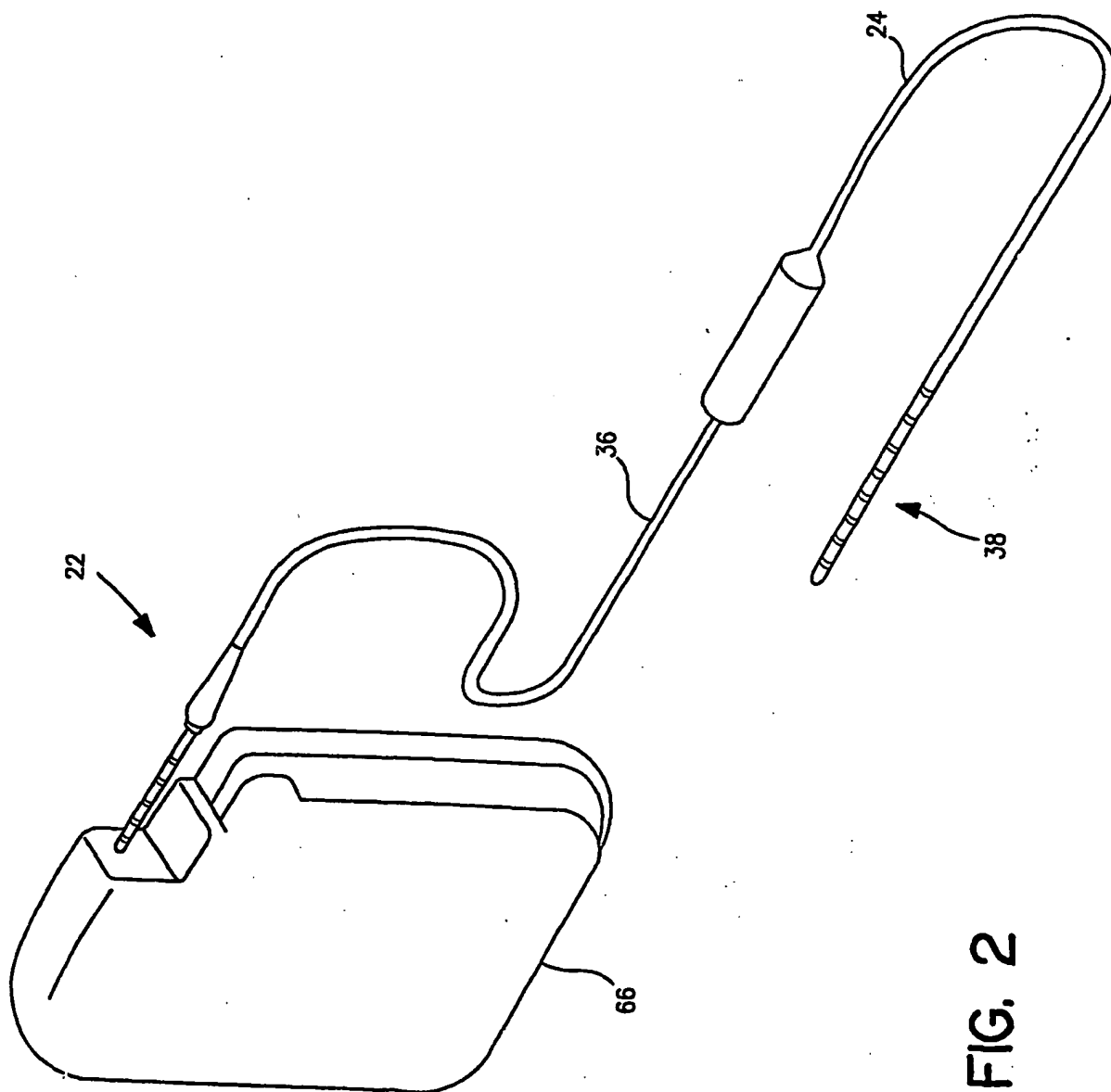


FIG. 2

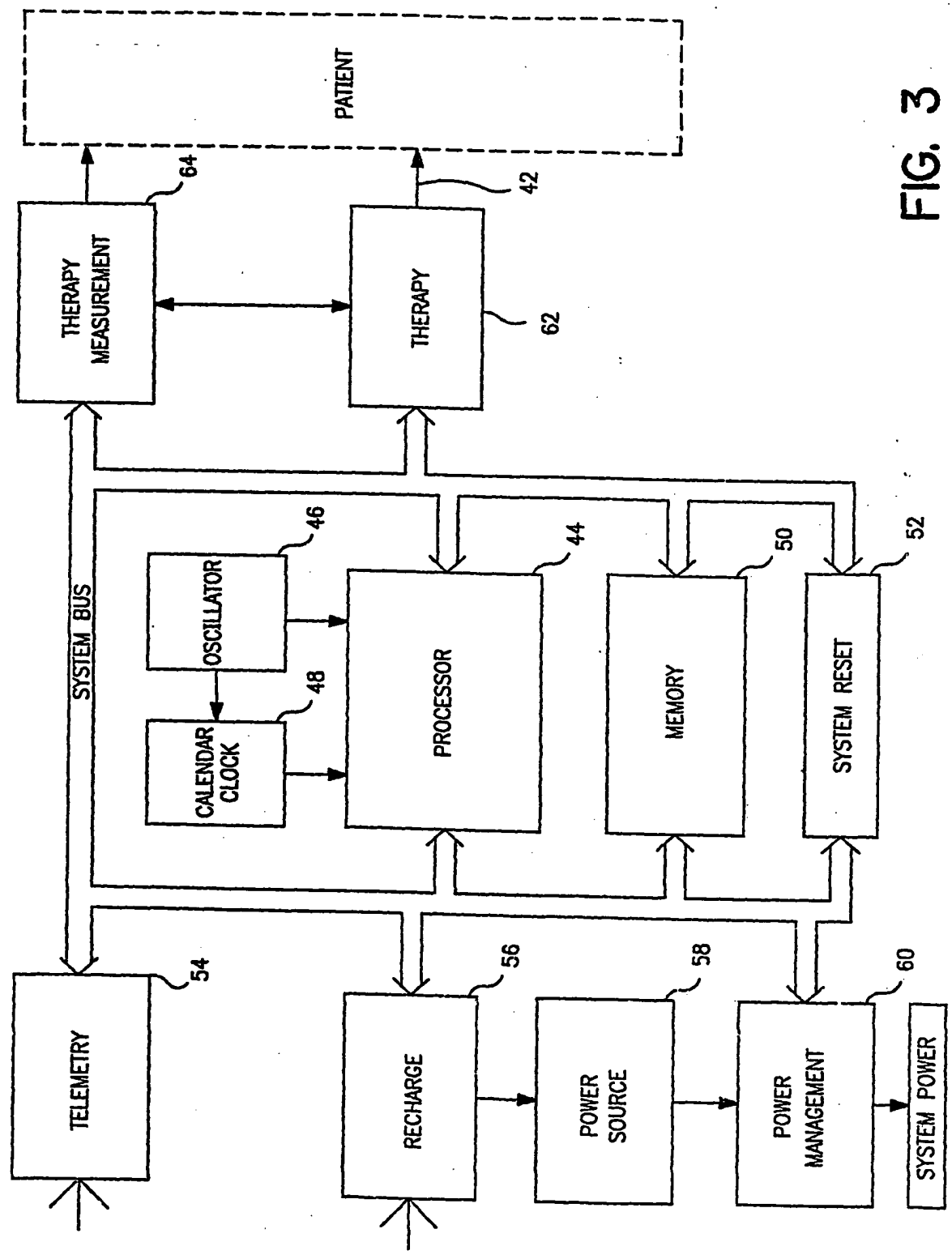


FIG. 3



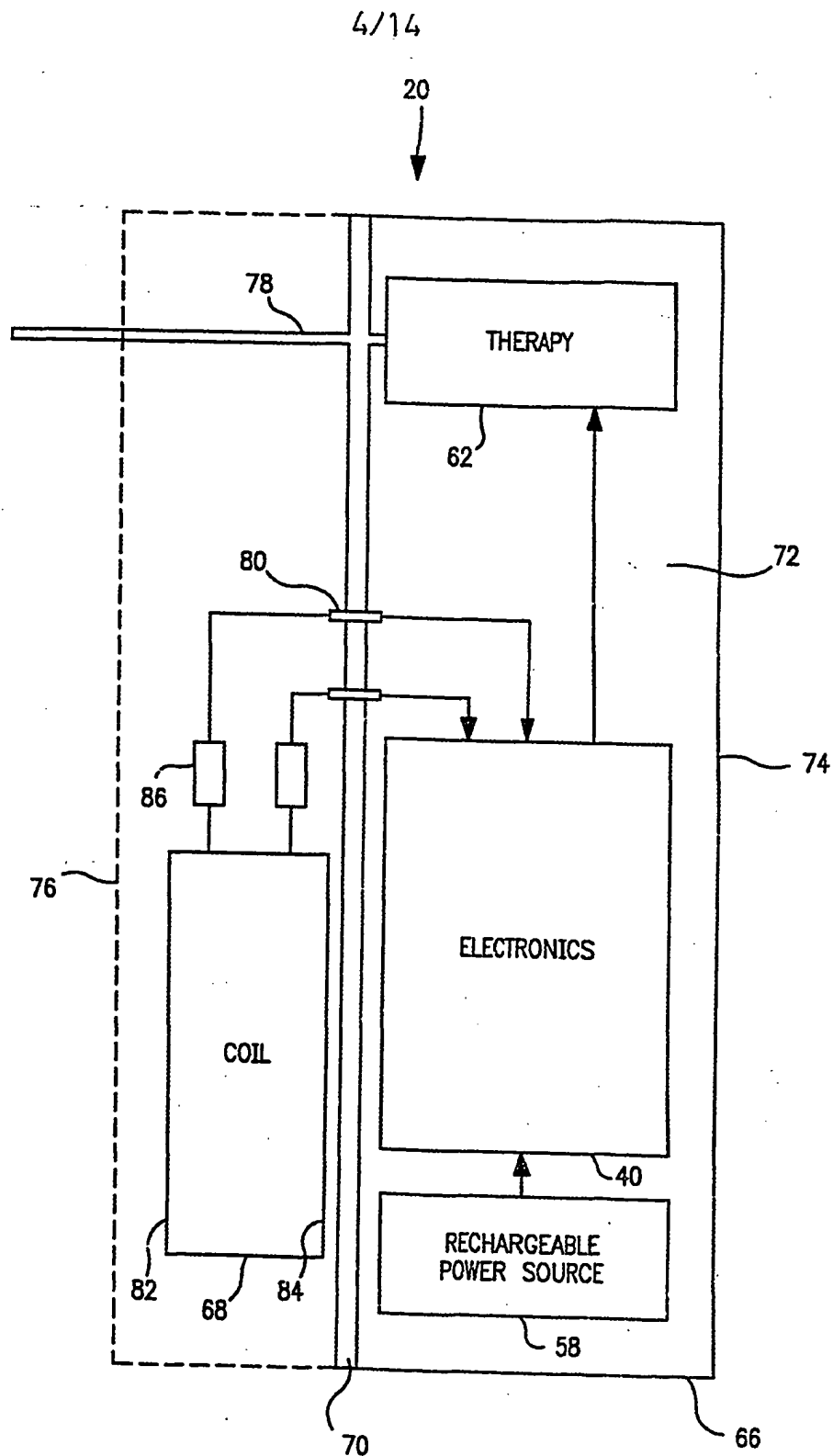


FIG. 4a

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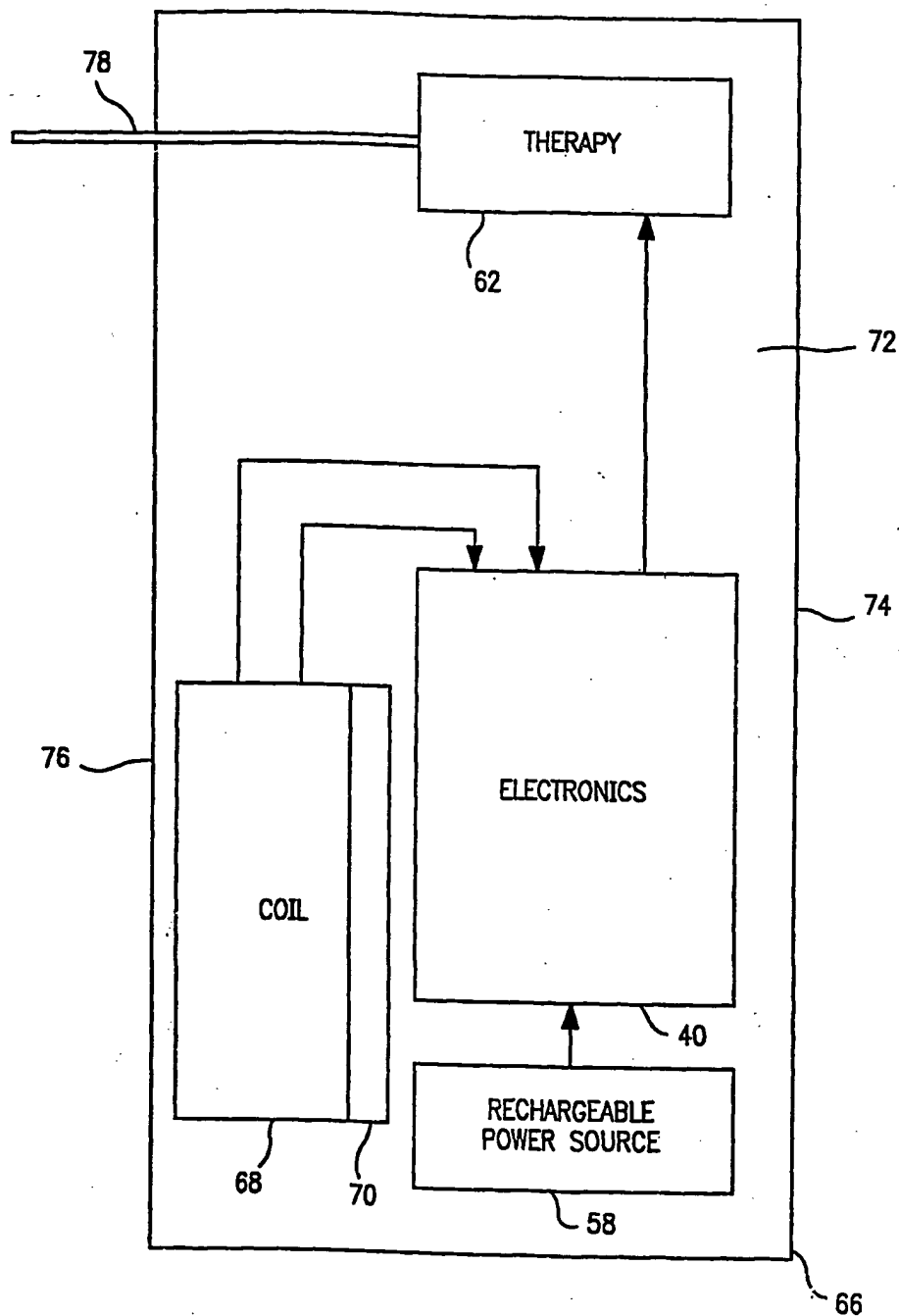


FIG. 4b

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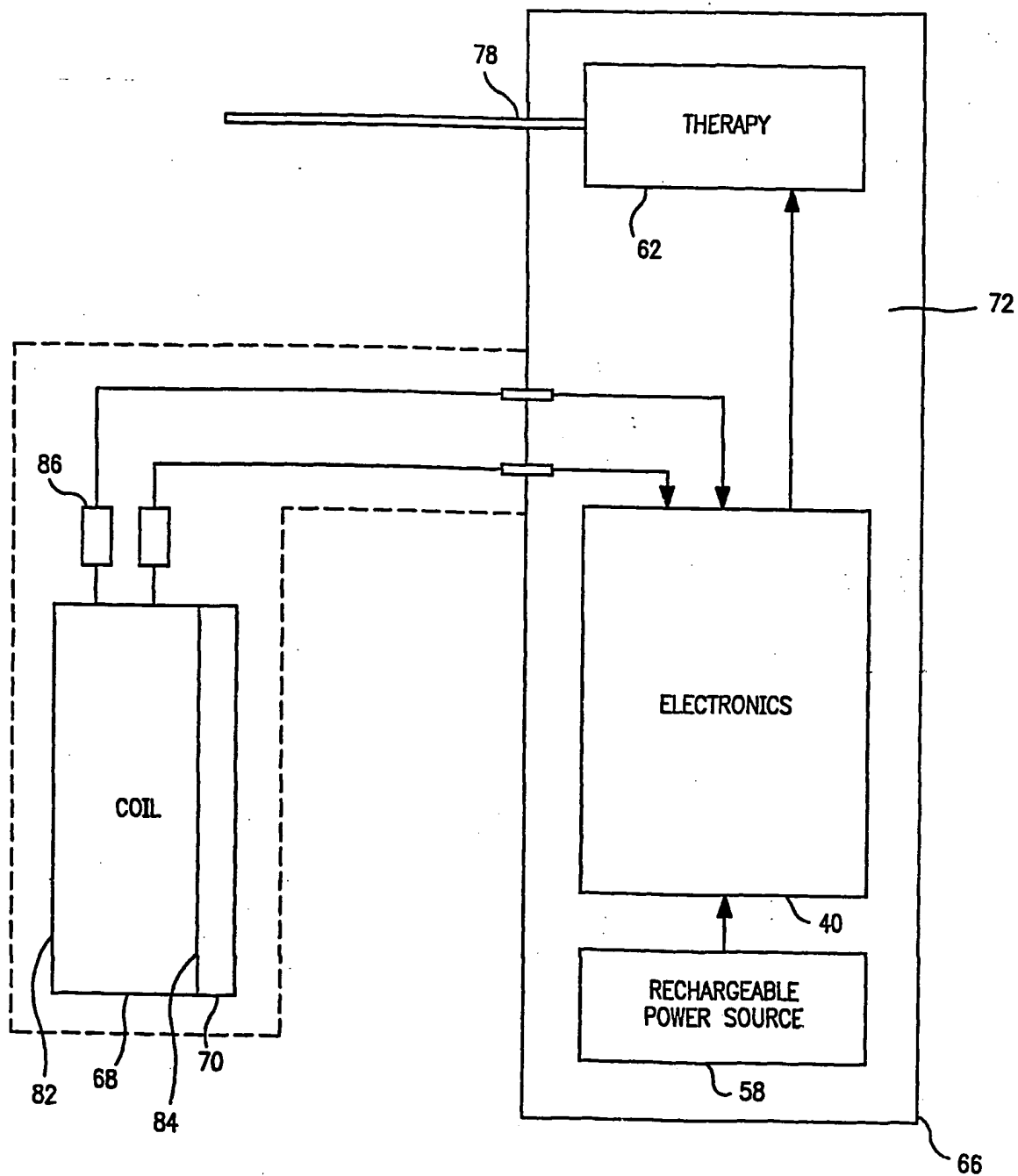


FIG. 4c

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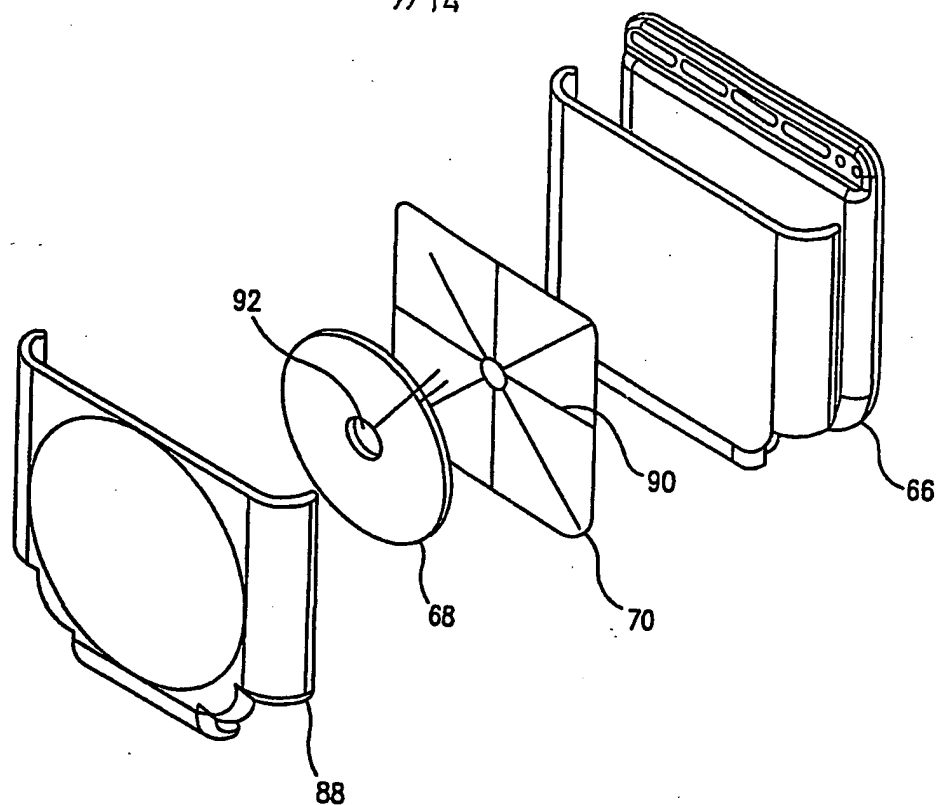


FIG. 5

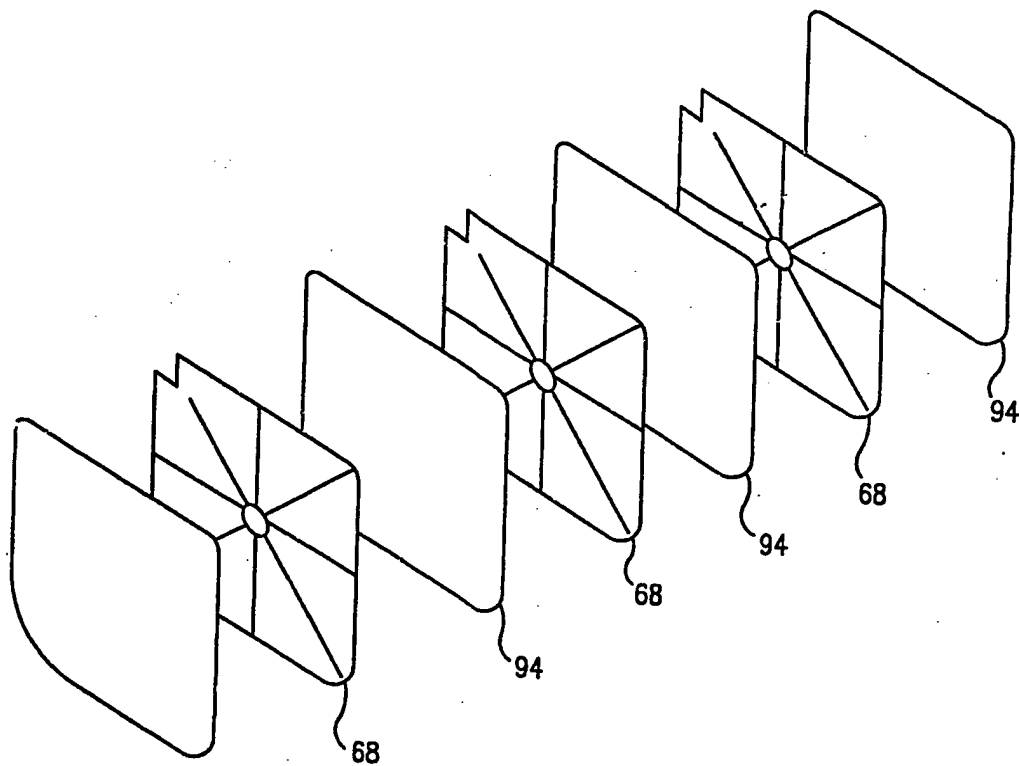


FIG. 6

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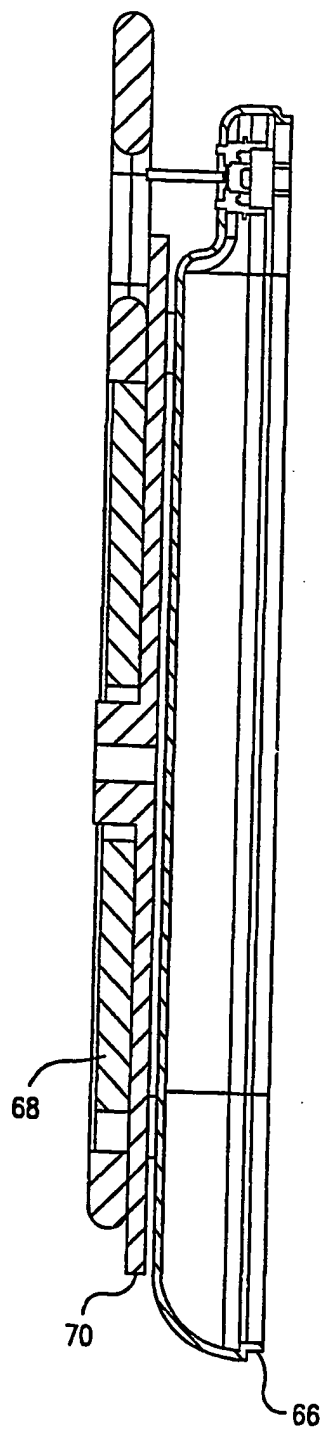


FIG. 7

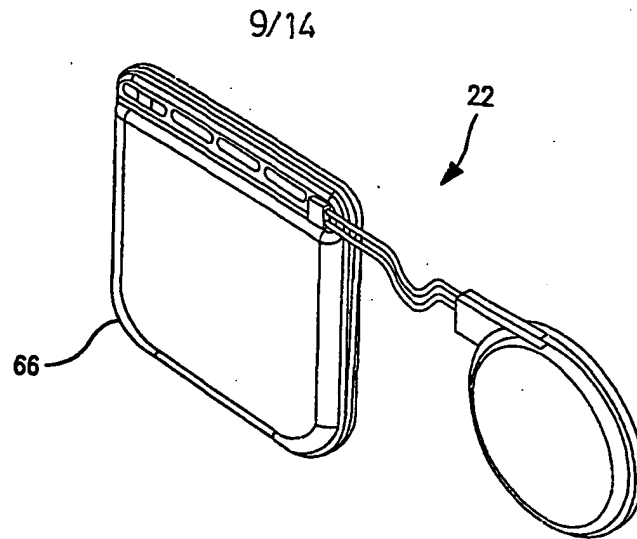


FIG. 8a

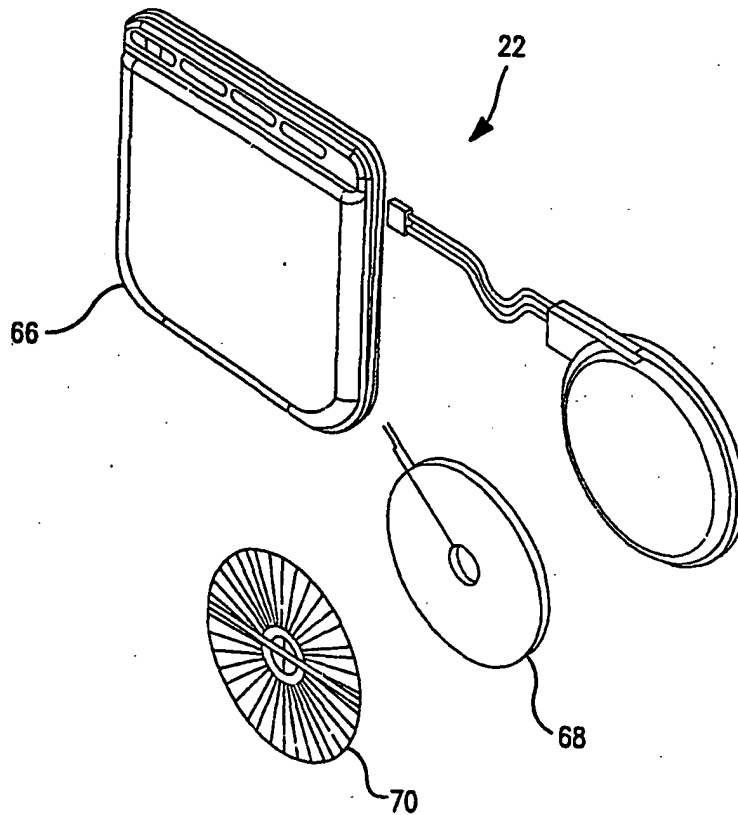


FIG. 8b

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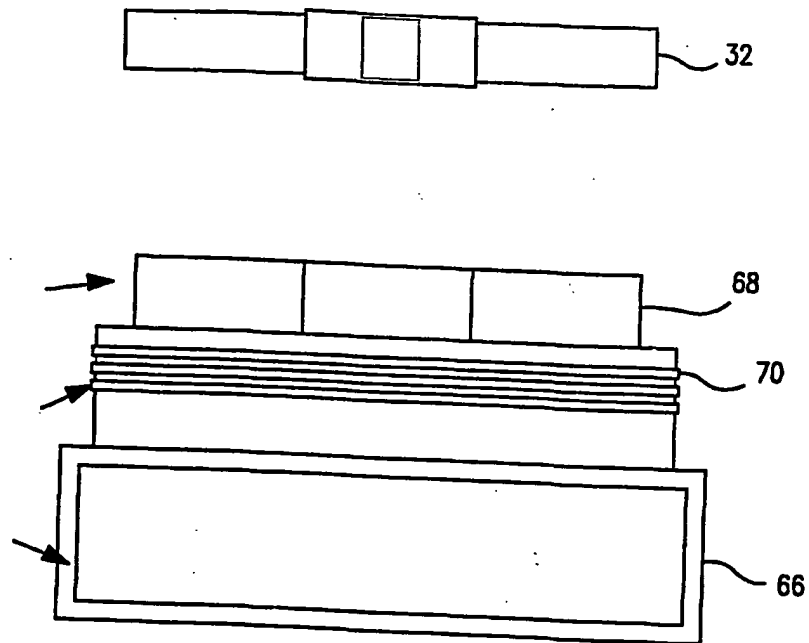


FIG. 9a

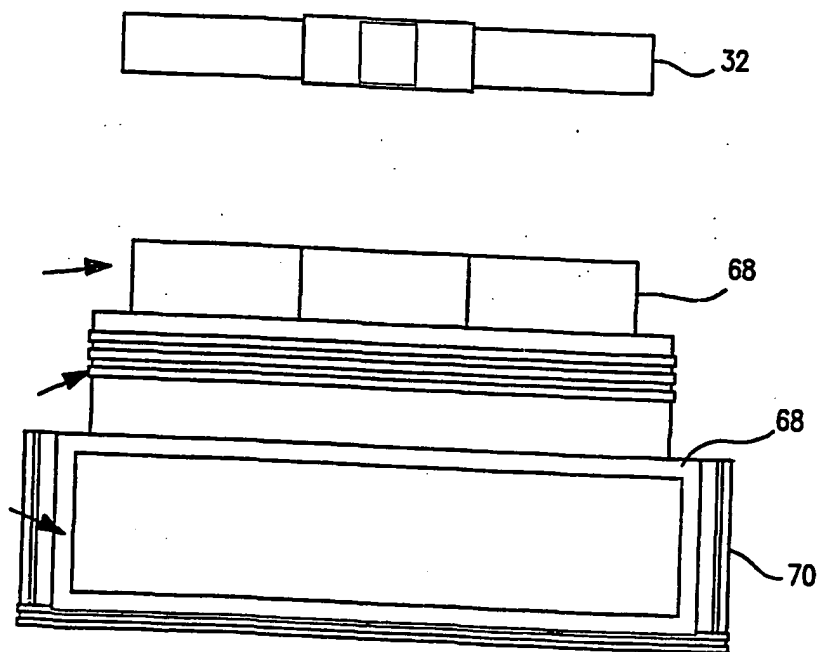


FIG. 9b

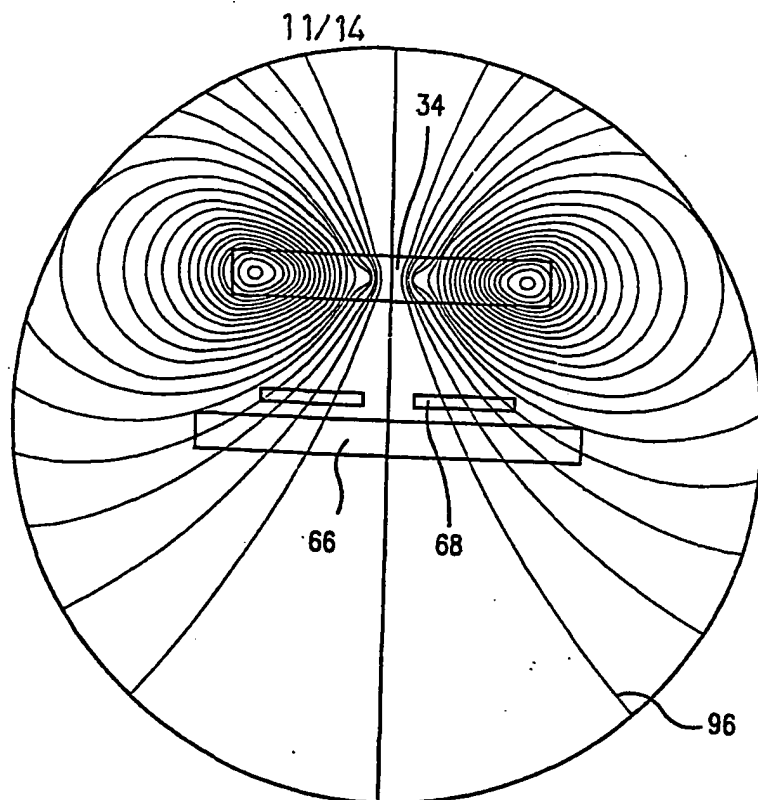


FIG. 10a

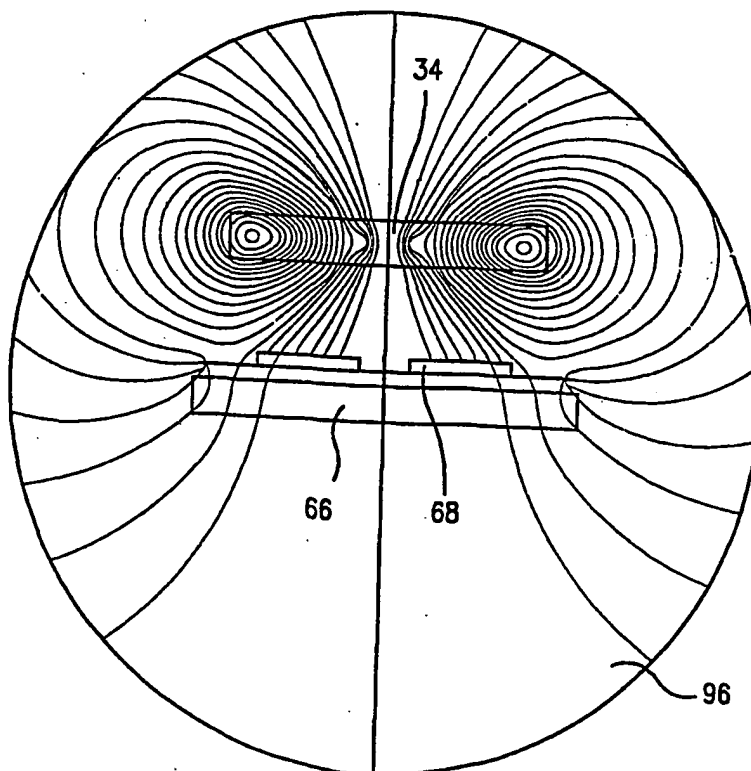


FIG. 10b



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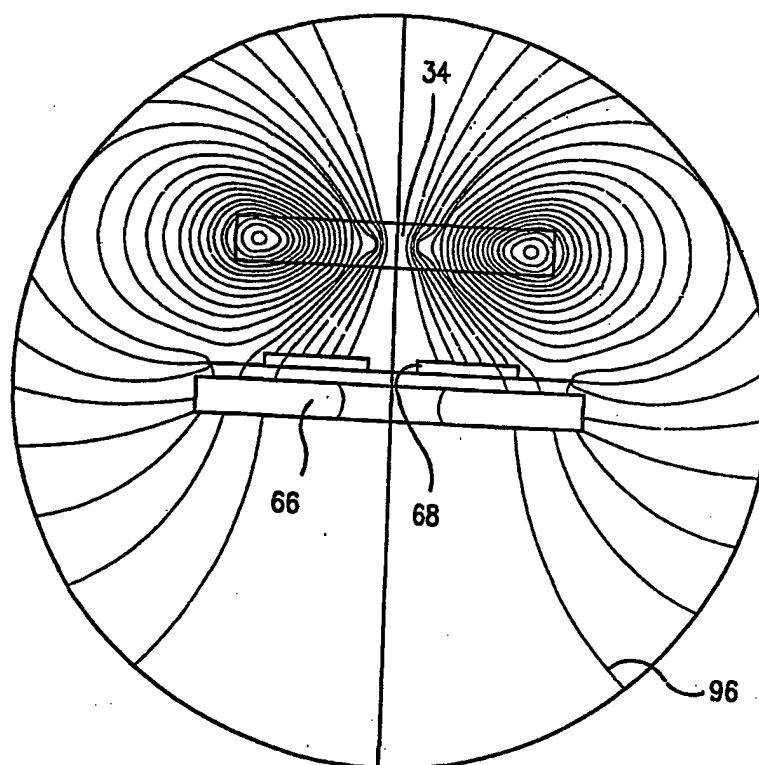


FIG. 10c

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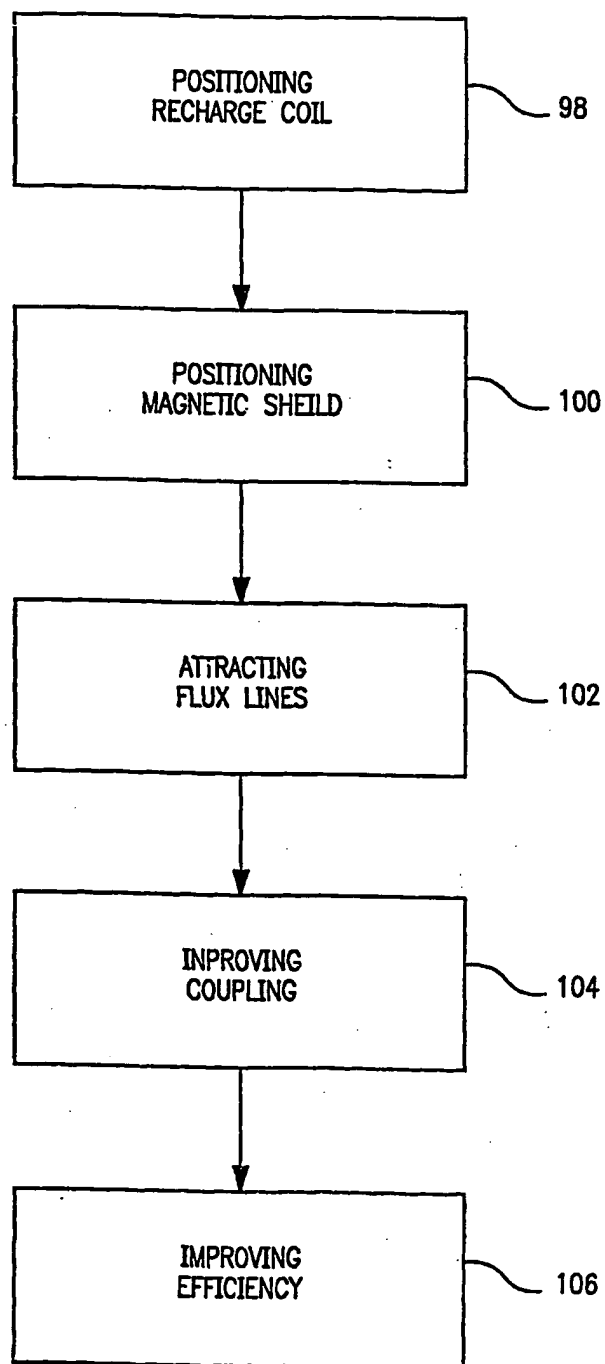


FIG. 11

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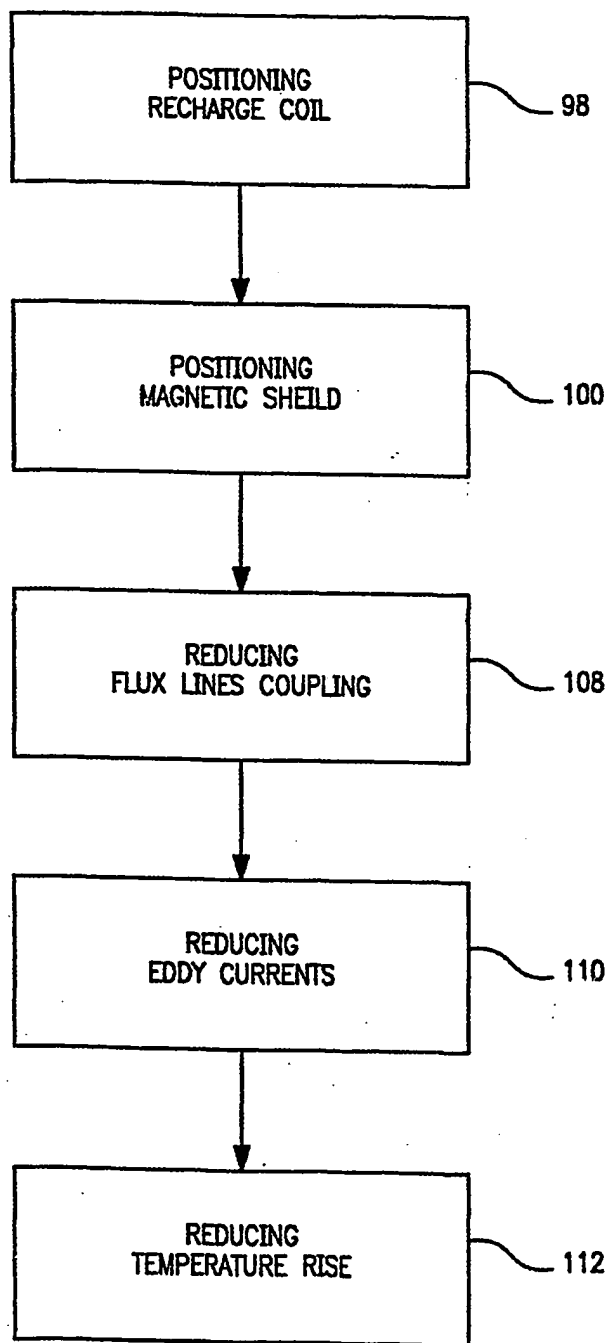


FIG. 12

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